



# UNITED STATES PATENT AND TRADEMARK OFFICE

*tan*

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/031,729	05/13/2002	Sigmund Lenz	MAF0002.US	6110
	7590	03/11/2004	EXAMINER	
Todd T Taylor Taylor & Aust 142 South Main Street PO Box 560 Avilla, IN 46710			LEE, BENNY T	
			ART UNIT	PAPER NUMBER
			2817	
DATE MAILED: 03/11/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

FILING DATE:

☐ This application has been examined ☒ Responsive to communication filed on 10 Nov 2003 ☒ This action is made final.

A shortened statutory period for response to this action is set to expire \_\_\_\_\_ month(s), \_\_\_\_\_ days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948.                  |
| 3. <input type="checkbox"/> Notice of Art. Cited by Applicant, PTO-1449.                | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152 |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474.     | 6. <input type="checkbox"/> _____   |

Part II SUMMARY OF ACTION

1. ☒ Claims 8-14 are pending in the application.  
Of the above, claims \_\_\_\_\_ are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 8-10 are rejected.
5. ☒ Claims 11-14 are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☒ The proposed additional or substitute sheet(s) of drawings, filed on 10 Nov 2003 has (have) been ☒ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).
12. ☐ Acknowledgement is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

Art Unit: 2817

The disclosure is objected to because of the following informalities: In the replacement paragraph to page 4, line 14, sixth and eighth lines therein, note that "14" (after each occurrence of "waveguide wall") should be deleted to avoid consistency problems; eighth line thereon, note that -- should precede "waveguide wall"; 13<sup>th</sup> line therein, note that -- (see Fig. 1) -- should follow "17"; 14<sup>th</sup> line therein, note that -- as seen in Fig. 1 -- should follow "17" for consistency of description.

Appropriate correction is required.

The following claim has been found objectionable for reasons set forth below:

In claim 10, line 5, should "an other" be rewritten as -- another -- for a proper characterization?

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 8, 10 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Hung et al.

Hung et al (figs. 1, 3, 4) discloses transition from a waveguide to a microstrip line comprising: a multi-layered substrate (208 in Fig. 3) including conductive layers (e.g. 210, 212, 214, 216, 218) alternating with insulating layers (e.g. 222, 224, 226, 228, etc). Note from figs. 1, 3 that a plurality of through contacts or vias (126) are disposed as to electrically connect the various conductive layers which inherently functions as super-imposed ground surfaces. Note that a microstrip line (112) is disposed on an upper

Art Unit: 2817

surface of the substrate. As is evident from figs. 3, 4, a waveguide (e.g. 234) is formed at least in conductive layers (202, 206) including an opening defined by waveguide walls. As evident from figs. 1, 4, the waveguide wall includes an opening through which microstrip line (112) on substrate (208) passes through such that a probe portion (113) of microstrip line (112) is disposed within the waveguide (234). Furthermore, note that at least some of the ground surfaces electrically contact the waveguide wall (e.g. at conductive layers (236, 238) and at interfaces with conductive layers (202, 206) as seen in fig. 3). As is evident from fig. 1, on the upper surface of substrate (208), first and second ground surfaces project inwardly on opposite sides of microstrip line (112).

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hung et al in view of Qvist (of record).

As described in the preceding rejection Hung et al discloses the claimed invention except for the through ~~plating~~<sup>plating</sup> at an end of the microstrip line functioning as an antenna.

As described in the previous Office action, Qvist (fig. 5) discloses a microstrip line (8) extending into a waveguide to function as an antenna. The microstrip line<sup>ne</sup> terminates in a pad (5 in Fig. 2 thereof) having upper and lower conductive sides (14, 13) connected by a via conductor (15).

Accordingly, it would have been obvious in view of the references, taken as a whole, to have modified the Hung et al probe portion or pad (113) of microstrip line (112) within the waveguide to have included upper and lower conductor sides connected by via, such as taught by Qvist. Such a modification would have provided the added benefit of increased frequency as taught by Qvist, thereby suggesting the obviousness of such a modification.

Applicant's arguments with respect to claims 8-10 have been considered but are moot in view of the new ground(s) of rejection.

Claims 11-14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2817

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication should be directed to Benny T Lee at telephone number (571)272-1764.

A handwritten signature in black ink that reads "Benny Lee". The signature is written in a cursive, flowing style.

**BENNY T. LEE**  
**PRIMARY EXAMINER**  
**ART UNIT 2817**